

10 Suggestions for More Successful Research Trials at Your Greenhouse

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Most greenhouse operations do not have a formal research and development department, but they do conduct research trials to accomplish the same goals. The R&D efforts, however, often are a second priority, behind production. This dooms them to failure when production and shipping demands are at their peak. Here are 10 suggestions for improving greenhouse research trials.

1. Do not schedule trials during your peak production periods. When visiting growers, I often hear that they had started to test a product or production procedure, but activities became "so hectic with shipping and all" that they could not keep up with the trial and lost track of it. Conduct trials when you have time to follow their progress and you can ensure that they are done correctly.

2. Do trials in a manner similar to your production. For many products and procedures, evaluating them under conditions different from how they are actually used provides erroneous information. For example, if Bonzi is trialed with a sprayer that gives different coverage than the sprayer actually used during production, the optimum rates will differ for the two methods.

Another instance would be a grower evaluating a new fertilizer applied using hand watering when a drip system is normally used for production. The fertilizer's performance is affected by the amount of irrigation and leaching.

3. Do not use the poorest greenhouse space for your trials. Trials are too important to be relegated to the coldest areas of the greenhouse, those with the least light or space in an older, small greenhouse that is different from the main production area. If a new production practice or new cultivar is to be evaluated fairly, it should be done in an environment that will indicate accurately how it will perform in actual production.

4. Clearly mark trials in the greenhouse. Many times I have walked around greenhouses with a grower in a failed attempt to find a trial that is under way -- the plants have been moved or the grower cannot remember where the plants were placed a month earlier. Establish a specific color of ribbon or flag to mark plants in trials. These should also be used to alert sales personnel not to ship the plants without first checking with the grower.

5. Test one factor at a time. If a new growing medium is being evaluated, do not also test a new fertilizer. If a new medium and a new fertilizer are combined and the plants do not perform as well as with the old medium and fertilizer, you don't know which is the problem.

6. Maintain accurate records. Start a notebook to keep records. When a trial is started, record how the plants are grown and what was tested. When the trial is complete, record the results with your interpretation of their meaning. These records are very useful when the new ideas are being implemented in production.

7. Include control plants. In university research, these are also called "checks." They are the plants to which the new procedure or product is being compared. If a trial is conducted to evaluate a new slow-release fertilizer, plants that receive the usual production fertilizer should be included in the trial. It is not possible to compare the new fertilizer to the old one unless they can be compared directly.

8. Randomize and replicate your treatments. These principles are followed in university research to ensure that differences between plants in two treatments are caused by the factor being tested and not by some other outside influence. It is not necessary for you to set up trials as elaborate as those in university studies, but you should use these principles to ensure good results.

Let's use an example of evaluating five petunia cultivars to determine which flowers earliest. If 24 flats of each cultivar are grown, rather than grouping all 24 together, it is better to divide them into two groups of 12. Then there are two replications of the trial.

In the first replication, the order of the cultivars may be one through five, but in the second replication they should be put in random order so they are not the same distance from the door or sidewall in each replication. Another way to replicate treatments and ensure accuracy of the results is to repeat the trial. We call that replicating in time.

9. Do the work before the information is needed. There are many products and practices you may not use routinely but that are held in reserve as tools to be used in special situations. These practices and products should be evaluated in advance so that you have a better feeling for their effects on a whole crop.

10. Conduct trials. A new product or production practice should never be applied to a whole crop before it has been evaluated. Too many growers have learned this lesson the hard way. Too many times I have seen a grower incorporate Product X into production and see improved plant quality, when the improvement actually comes from the grower paying more attention to production practices -- not from Product X.

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